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COMPLETE SPECIFICATION.

A New or Improved Process for the Manufacture of Bread and the like with Extract of Malt.

I, WILLIAM PATERSON of Phœnix Works, Maryhill, Glasgow, in the County of Lanark, North Britain, Manufacturing Chemist, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement :—

This invention relates to a new or improved process for the manufacture of bread and the like with extract of malt, and has for its object to manufacture a more nutritive and easily digested bread or the like than hitherto.

I take any suitable flour, meal or farinaceous substance or any suitable mixture or mixtures of flour, meal or farinaceous substances hereinafter to be called "flour" and I place any convenient quantity say from 5 lbs. to 7 lbs. or more or less, in any suitable vessel, copper or pan and I add a sufficient quantity of tepid water to form the flour into a thick paste. To the thick paste or flour I add about 1 gallon, more or less of boiling or very hot water, that is to say sufficient boiling water to raise the temperature up to say 190 degrees, Fahrenheit or thereby carefully stirring the mixture during such addition of water until all the hot water is added ; I allow this mixture of flour and water to cool down to say 150° F. and add about 1 lb. or 1½ lbs., more or less of extract of malt preferably the pure extract of malt as described in the Specification of my Patent No. 6337 dated 1890. At lower temperature than this 150° F. the formation of dextrins is slow and favors that of glucose or sugar at the expense of the dextrins. I then mix the said ingredients thoroughly together and place them in a vessel, copper or pan over a gas or other stove, fire, water bath or other suitable apparatus, and in ten minutes or thereby the temperature will have risen to say 158° F. which is a very suitable temperature for the formation of dextrins. After maintaining the latter temperature for 15 minutes or thereby, stirring the mixture frequently—I take about 15 minutes to increase the temperature to say 165° F. or thereby, and as the latter temperature is near the point at which the efficacy of the diastase contained in the extract of malt ceases, provided always that the extract of malt has been prepared and quickly evaporated down at very low temperature as prolonged boiling is apt to destroy the valuable reducing properties of the same. Great care must be taken not to raise the temperature of the now detrinous mixture too quick or too high until the end of the operation which will be about say ½ to ¾ of an hour, more or less, from beginning at the temperature of say 150° F. to the 165° F. when the active properties of the extract of malt are nearly exhausted. The temperature of the detrinous mixture can now be raised quickly to 175° F. or if convenient to the boiling point or nearly so by the aforesaid means or by the addition of boiling water during which raising of temperature the reduction of the dextrins into sugar is prevented by the diastase becoming inert at say about 175° F. or thereby. After the dextrinous mixture has been raised to the high temperature it may be set aside to cool down sufficiently so as to suit the temperature of the materials intended for the batch of bread, biscuits, or other articles. Or if desired when the dextrinous mixture has reached the temperature of say 165° F. or thereby, it may be then allowed to be quickly cooled and mixed with the materials from which the batch of bread, biscuits or articles are to be made. This dextrinous mixture can now be added to any well known mixture of meal, flour or mixture of flours or meal whether in a fermented, partly fermented or unfermented state, for example—it may be mixed, with say, about 25 lbs. or thereby, of such mixture or materials intended for a batch of bread biscuits and the like.

[*Price 8d*]

The said dextrinous mixture and mixture of materials are then mixed and doughed up in the usual and well known manner as already practised.

Another method I have found very suitable for the reduction of the starch of the flour into dextrins and malt sugar is as follows.—When say 5 lbs. more or less of any suitable and convenient mixture of flour or other ferinaceous substance or substances or other mixture and about 1 lb. or 1½ lbs. of pure extract of malt preferably my said patented extract of malt. Of course I wish it to be understood that when I say 1 lb. or 1½ lbs. of malt extract to 5 lbs. of flour I do not in any way limit myself to the above quantities, but I have always found these quantities very suitable; more or less flour can be added and more or less malt extract can be added; according to circumstances. When the flour has been mixed into a uniform thick paste with tepid water in a pan or copper of sufficient size to hold the combined total quantities of the flour, water, and malt extract. To this thick paste I add a sufficient quantity of hot or boiling water, in a gentle stream, stirring continually or frequently until the temperature of the mixed flour is raised to say 150° F. or thereby, when I now add the extract of malt. After mixing the said flour and malt extract I then raise it up to the temperature of say 158° F. by means of a gas or fire stove, a gentle stream of steam or otherwise. I then maintain the temperature of 158° F. for about ¼ of an hour or thereby, after which I gradually raise the temperature say in about 15 minutes or thereby, to 165° F. or thereby; when the latter temperature is reached the dextrinous mixture can now be cooled down if necessary.

If not for immediate use the temperature of the finished dextrinous mixture can be raised from say 165° F. or thereby, up to or about the boiling point and afterwards allowed to cool as before described, when the dextrinous mixture will be ready for use.

As a modification of my said invention I may use in lieu of the pure extract of malt as described, any other kind of malt extract, infusion of malt, crushed, powdered or sifted malt, in either of which case the quantity of malt used would preferably be increased so as to give the same resulting or proportional strength as would be obtained by the pure malt extract.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

The new or improved process for the manufacture of dextrinous bread, biscuits, rusks and the like with the aid of extract of malt as described.

Dated this 23rd day of November 1892.

J. Y. JOHNSON,
115, St. Vincent Street, Glasgow, Applicant's Agent.

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